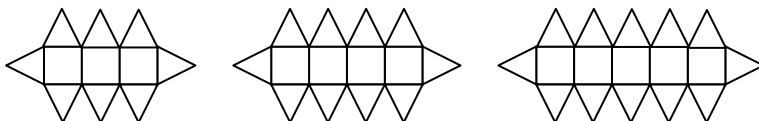


National 5

Homework EF5(N)

1. Calculate the average speed for each of these journeys. Give your answers in kilometers per hour.
 - (a) 350 km in 5 hours.
 - (b) 60 km in 35 minutes.
 - (c) 134 km in 1 hour 27 minutes.
2. Calculate the distance travelled for each of these journeys. Give your answers in kilometers.
 - (a) 20 minute journey at an average speed of 50 km/hr.
 - (b) 1 hour 40 minute journey at an average speed of 36 km/hr.
 - (c) 2 hour 27 minute journey at an average speed of 72 km/hr.
3. Calculate the time taken for each of these journeys. Give your answers in hours and minutes.
 - (a) 385 km at an average speed of 70 km/hr.
 - (b) 120 km at an average speed of 48 km/hr.
 - (c) 100 km at an average speed of 60 km/hr.
4.
 - (a) The price of an item including $17\frac{1}{2}\%$ VAT is £705. Calculate the price before VAT is added.
 - (b) After a 30% reduction the selling price of an item is £455. Calculate the price before the reduction.
5. Write down all of the (positive) factors of 120.
6. A circle has circumference 392cm. Find its radius, and hence its area.

7.

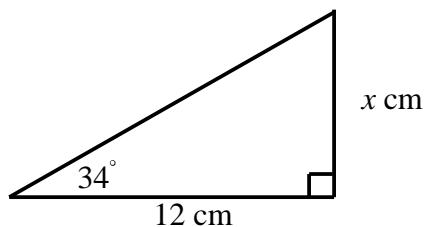


The figures above are made of squares and triangles.

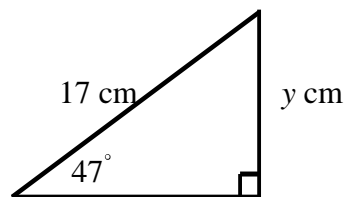
- (a) Make a table to show the number of squares and triangles in each figure.
 - (b) Another figure has 24 squares. How many triangles does it have?
 - (c) How many triangles T, would be needed for S squares in this pattern?
8. Without the use of a calculator, and showing all working, evaluate:
 - (a) $1\frac{1}{3} + 2\frac{3}{4}$
 - (b) $2\frac{1}{4} \times 1\frac{1}{3}$
 - (c) $6 \div \frac{2}{3}$
9. A ship steams due west for 1 hour at a speed of 20 km/hr. It then changes course and steams due south for 1 hour at a speed of 24 km/hr.
Calculate its direct distance from its starting point.

10. Calculate the length of the unknown side in each of these triangles.

(a)



(b)



11. (a) Find the value of xy^2 when $x = 4$ and $y = -3$.

- (b) Evaluate $\frac{1}{a} - \frac{1}{b}$ when $a = 5$ and $b = 6$.

12. The surface area of a cylinder is given by the formula $A = 2\pi r r + h$, where r is the radius and h is the height.

A cylindrical tank has radius 3 metres and height 11 metres. Calculate its surface area.

13. An equilateral triangle has sides of length 12 cm.
Calculate its altitude, and hence its area.

14. Without using a calculator, calculate each of the following. Show all your working.

(a) $17\frac{1}{2}\%$ of £240

(b) $12\frac{1}{2}\%$ of £450